

NHDOT SPR2 PROGRAM

RESEARCH PROGRESS REPORT

Project # Statewide-SPR 26962Q		Report Period Year 2017 <input checked="" type="checkbox"/> Q1 (Jan-Mar) <input type="checkbox"/> Q2 (Apr-Jun) <input type="checkbox"/> Q3 (Jul-Sep) <input type="checkbox"/> Q4 (Oct-Dec)	
Project Title: Iron Oxide Deposits on Highway Construction Projects			
Project Investigator: James Degnan Phone: 603 226 7826		E-mail: jrdegan@usgs.gov	
Project Start Date: September 21, 2016	Project End Date: September 30, 2018	Project schedule status: <input checked="" type="checkbox"/> On schedule <input type="checkbox"/> Ahead of schedule <input type="checkbox"/> Behind schedule	

Brief Project Description:

Rock fill material placed in contact with wet areas adjacent to roadways has been associated with the mobilization of high concentrations of iron and iron fouling in surface water. Collection of new data to characterize iron fouling, as well as statistical and geochemical modeling can improve our understanding of iron fouling potential.

Progress this Quarter (include meetings, installations, equipment purchases, significant progress, etc.):

Regression modeling and probability mapping: road fill/valley bottom locations have been located where possible
 Preliminary regression, All independent variables were extracted from NHDOT road cut location
 Next round of regression: Bedrock variables will be extracted from NHDOT road cut location and Basin variables extracted from road fill/valley bottom locations where possible
 - USGS internal 10% project review completed on 3/06/2017
 - Five detailed sampling and geochemical modeling sites have been selected.
 - Ryan C. Wicks (UMASS) is looking into the feasibility of using UAS at the sites to map Fe as part of graduate research
 - NHGS stream crossing photos (Shane Csiki) near road cuts for sites buried in snow and not yet visited by USGS have been examined to aid reconnaissance.

Items needed from NHDOT (i.e., Concurrence, Sub-contract, Assignments, Samples, Testing, etc...):

A discussion and/or reports, plans, well and boring logs for retention ponds at Exit 3 and 9 on I 93, adjacent to Mirror Lake and I 93 (road cut 010), at the Granite Lake Rd. exit on Rt. 9 in Nelson.

Anticipated research next three (3) months:

Hydrologic, soil and topographic independent variables will be extracted using road fill/valley bottom locations
 Management of existing data, independent variable identification and regression will continue.
 Field sampling plans will be made.
 Preliminary geochemical modeling will begin

Circumstances affecting project:

Tasks (from Work Plan) work plan element from proposal	Planned % Complete	Actual % Complete
Project planning	100	100
Data collection	66.6	33.3
Database construction	40	25
Modeling	30	20
Data analysis	20	15
Internal reviews	33	33
Data and model archive	0	0
Report	0	2